

We claim:

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1. A computerized method for adding an association of a project management object to a set of associated project management objects, the method comprising:

5 creating a link content data structure;
 setting a link set reference field to a value that refers to a link set data structure corresponding to the set of associated project management objects;
 setting an object reference field to refer to the project management object;
 setting a start time field in the link content data structure to a value representing
10 the current time; and
 setting an end time field in the link content data structure to a value representing a most recent version of the object.

2. The computerized method of claim 1, wherein setting an object reference field
15 includes setting the object reference field to a URL (Uniform Resource Locator) that locates the project management object.

3. The computerized method of claim 1, wherein the link content data structure is a row in a database.

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4. The computerized method of claim 1, wherein the link set data structure is a row in a database.

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The computerized method of claim 1, wherein the project management object is selected from the group consisting of: source code file, development issue data, bug data, project milestone, and software specification file.

- 5 6. A computerized method for removing a project management object from a set of associated project management objects, the method comprising:

receiving an identifier for a link set corresponding to the set of associated project management objects;

receiving a reference to the project management object;

- 10 locating a link content data structure containing the reference to the project management object; and

setting an end time field in the link content data structure to a value representing the current time.

- 15 7. The computerized method of claim 6, wherein the reference to the project management object is a URL.

8. The computerized method of claim 6, wherein the link set data structure is a row in a database.

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9. The computerized method of claim 6, wherein the link content data structure is a row in a database.

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Pat 10. The computerized method of claim 6, wherein the project management object is selected from the group consisting of: source code file, development issue data, bug data, project milestone, and software specification file.

5 11. A computerized method for retrieving a set of project management objects associated with a source program management object, the method comprising:
receiving a reference to the source program management object and a time value;
querying a set of link content data structures to create a set of valid link content data structures, wherein each valid link content data structure contains the reference to
10 the source program management object and further contains a start time value less than or equal to the time value and an end time value that is greater than or equal to the time value;
creating a set of source link set references comprising the link set reference contained in the set of valid link content data structures; and
15 for each source link set reference in the set of source link set references querying the set of link content data structures to create a set of matching project management objects, wherein each matching project management object has a link set reference equal to the source link set reference and further has a start time value less than or equal to the time value and an end time value that is greater than or equal to the time value.

20 12. The computerized method of claim 11, wherein the reference to the source management object is a URL.

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13. The computerized method of claim 11, wherein the project management objects are selected from the group consisting of: source code file, development issue data, bug data, project milestone, and software specification file.

5 14. A computer-readable medium having a data structure stored thereon, the data structure comprising:

a first field comprising a reference to a link set data structure corresponding to a set of associated project management objects;

a second field comprising a start time;

10 a third field comprising an end time;

a fourth field comprising a reference to a target project management object;

and

wherein the second and third field define a range of time that the target project management object is associated with the set of associated project management objects.

15 15. The computer readable medium of claim 14, wherein the reference to a target object is a URL.

16. A computerized system comprising:

20 a processor and a computer-readable medium;

an operating environment executing on the processor from the computer-readable medium; and

a project management system operative to maintain versions of associations between project management objects;

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17. The computerized system of claim 16, wherein the project management system includes:

a versioned file database operative to store a plurality of files wherein each of the files has a version;

5 a project data database operative to store project related data; and

a project associations database operative to store associations between the project related data and the plurality of files.

10 18. The computerized system of claim 17, wherein the project data database is a relational database.

19. The computerized system of claim 17, wherein the project associations database is a relational database.

15 20. The computerized system of claim 17, wherein the project associations database and the project data database are contained within a same database management system.

21. The computerized system of claim 17, wherein the versioned file system is a source code repository.

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22. A computer readable medium having computer executable instructions for performing a method for adding an association of a project management object to a set of associated project management objects, the method comprising:

creating a link content data structure;

25 setting a link set reference field to a value that refers to a link set data structure corresponding to the set of associated project management objects;

setting an object reference field to refer to the project management object;

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setting a start time field in the link content data structure to a value representing the current time; and

setting an end time field in the link content data structure to a value representing a most recent version of the object.

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23. The computer-readable medium of claim 22, wherein setting an object reference field includes setting the object reference field to a URL (Uniform Resource Locator) that locates the project management object.

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24. The computer-readable medium of claim 22, wherein the link content data structure is a row in a database.

25. The computer-readable medium of claim 22, wherein the link set data structure is a row in a database.

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26. The computer-readable medium of claim 22, wherein the project management object is selected from the group consisting of: source code file, development issue data, bug data, project milestone, and software specification file.

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27. A computer-readable medium having computer executable instructions for performing a method for removing a project management object from a set of associated project management objects, the method comprising:

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receiving an identifier for a link set corresponding to the set of associated project management objects;

receiving a reference to the project management object;

locating a link content data structure containing the reference to the project

5 management object; and

setting an end time field in the link content data structure to a value representing the current time.

28. The computer-readable medium of claim 27, wherein the reference to the project
10 management object is a URL.

29. The computer-readable medium of claim 27, wherein the link set data structure is a row in a database.

15 30. The computer-readable medium of claim 27, wherein the link content data structure is a row in a database.

31. The computer-readable medium of claim 27, wherein the project management object is selected from the group consisting of: source code file, development issue data,
20 bug data, project milestone, and software specification file.

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32. A computer-readable medium having computer executable instructions for performing a method for retrieving a set of project management objects associated with a source program management object, the method comprising:

receiving a reference to the source program management object and a time value;

5 querying a set of link content data structures to create a set of valid link content data structures, wherein each valid link content data structure contains the reference to the source program management object and further contains a start time value less than or equal to the time value and an end time value that is greater than or equal to the time value;

10 creating a set of source link set references comprising the link set reference contained in the set of valid link content data structures; and

for each source link set reference in the set of source link set references querying the set of link content data structures to create a set of matching project management objects, wherein each matching project management object has a link set reference equal
15 to the source link set reference and further has a start time value less than or equal to the time value and an end time value that is greater than or equal to the time value.

33. The computer-readable medium of claim 32, wherein the reference to the source management object is a URL.

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34. The computer-readable medium of claim 32, wherein the project management objects are selected from the group consisting of: source code file, development issue data, bug data, project milestone, and software specification file.